

Package ‘ggside’

October 24, 2021

Type Package

Title Side Grammar Graphics

Version 0.1.3

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Description The grammar of graphics as shown in 'ggplot2' has provided an expressive API for users to build plots. 'ggside' extends 'ggplot2' by allowing users to add graphical information about one of the main panel's axis using a familiar 'ggplot2' style API with tidy data. This package is particularly useful for visualizing metadata on a discrete axis, or summary graphics on a continuous axis such as a boxplot or a density distribution.

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Encoding UTF-8

RoxygenNote 7.1.1

VignetteBuilder knitr

Depends ggplot2 (>= 3.0.0)

Imports grid, gtable, rlang, scales, glue, stats

Suggests tidyr, dplyr, testthat (>= 3.0.3), knitr, rmarkdown, vdiff (>= 1.0.0), ggdendro, viridis

Config/testthat/edition 3

NeedsCompilation no

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Repository CRAN

Date/Publication 2021-10-24 13:10:03 UTC

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as_ggsideFacet	<i>Extending base ggproto classes for ggside</i>
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Description

S3 class that converts old Facet into one that is compatible with ggside. Can also update ggside on the object. Typically, the new ggproto will inherit from the object being replaced.

check_scales_collapse is a helper function that is meant to be called after the inherited Facet's compute_layout method

sidePanelLayout is a helper function that is meant to be called after the inherited Facet's compute_layout method and after check_scales_collapse

map_data_ggside is the mapping function used to replace all map_data method on [FacetSideNull](#), [FacetSideGrid](#), and [FacetSideWrap](#). It is exported for conveniences of extensibility.

Usage

```
as_ggsideFacet(facet, ggside)

check_scales_collapse(data, params)

sidePanelLayout(layout, ggside)

map_data_ggside(data, layout, params)
```

Arguments

facet	Facet ggproto Object to replace
ggside	ggside object to update
data	data passed through ggproto object
params	parameters passed through ggproto object
layout	layout computed by inherited ggproto Facet compute_layout method

Value

ggproto object that can be added to a ggplot object

Extended Facets

The following is a list [ggplot2](#) facets that are available to use by ggside base.

- [FacetNull](#) -> FacetSideNull
- [FacetGrid](#) -> FacetSideGrid
- [FacetWrap](#) -> FacetSideWrap

 geom_xsidebar

Side bar Charts

Description

The [xside](#) and [yside](#) variants of [geom_bar](#) is [geom_xsidebar](#) and [geom_ysidebar](#). These variants both inherit from [geom_bar](#) and only differ on where they plot data relative to main panels.

The [xside](#) and [yside](#) variants of [geom_col](#) is [geom_xsidecol](#) and [geom_ysidecol](#). These variants both inherit from [geom_col](#) and only differ on where they plot data relative to main panels.

Usage

```
geom_xsidebar(
  mapping = NULL,
  data = NULL,
  stat = "count",
  position = "stack",
  ...,
  width = NULL,
  na.rm = FALSE,
  orientation = "x",
  show.legend = NA,
  inherit.aes = TRUE
)

geom_ysidebar(
```

```

mapping = NULL,
data = NULL,
stat = "count",
position = "stack",
...,
width = NULL,
na.rm = FALSE,
orientation = "y",
show.legend = NA,
inherit.aes = TRUE
)

geom_xsidecol(
  mapping = NULL,
  data = NULL,
  position = "stack",
  ...,
  width = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)

geom_ysidecol(
  mapping = NULL,
  data = NULL,
  position = "stack",
  ...,
  width = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE,
  orientation = "y"
)

```

Arguments

mapping	Set of aesthetic mappings created by aes() or aes_() . If specified and <code>inherit.aes = TRUE</code> (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.
data	<p>The data to be displayed in this layer. There are three options:</p> <p>If <code>NULL</code>, the default, the data is inherited from the plot data as specified in the call to ggplot().</p> <p>A <code>data.frame</code>, or other object, will override the plot data. All objects will be fortified to produce a data frame. See fortify() for which variables will be created.</p> <p>A function will be called with a single argument, the plot data. The return value must be a <code>data.frame</code>, and will be used as the layer data. A function</p>

	can be created from a formula (e.g. <code>~ head(.x, 10)</code>).
<code>stat</code>	Override the default connection between <code>geom_bar()</code> and <code>stat_count()</code> .
<code>position</code>	Position adjustment, either as a string, or the result of a call to a position adjustment function.
<code>...</code>	Other arguments passed on to <code>layer()</code> . These are often aesthetics, used to set an aesthetic to a fixed value, like <code>colour = "red"</code> or <code>size = 3</code> . They may also be parameters to the paired geom/stat.
<code>width</code>	Bar width. By default, set to 90% of the resolution of the data.
<code>na.rm</code>	If FALSE, the default, missing values are removed with a warning. If TRUE, missing values are silently removed.
<code>orientation</code>	The orientation of the layer. The default (NA) automatically determines the orientation from the aesthetic mapping. In the rare event that this fails it can be given explicitly by setting <code>orientation</code> to either "x" or "y". See the <i>Orientation</i> section for more detail.
<code>show.legend</code>	logical. Should this layer be included in the legends? NA, the default, includes if any aesthetics are mapped. FALSE never includes, and TRUE always includes. It can also be a named logical vector to finely select the aesthetics to display.
<code>inherit.aes</code>	If FALSE, overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. <code>borders()</code> .

Value

XLayer or YLayer object to be added to a ggplot object

Aesthetics

Required aesthetics are in bold.

- `x`
- `y`
- `fill` or `xfill` Fill color of the xsidebar
- `fill` or `yfill` Fill color of the ysidebar
- `width` specifies the width of each bar
- `height` specifies the height of each bar
- `alpha` Transparency level of `xfill` or `yfill`
- `size` size of the border line.

See Also

[geom_xsidehistogram](#), [geom_yidehistogram](#)

Examples

```
p <-ggplot(iris, aes(Sepal.Width, Sepal.Length, color = Species, fill = Species)) +
  geom_point()

#sidebar - uses StatCount
p +
  geom_xsidebar() +
  geom_ysidebar()

#sidecol - uses Global mapping
p +
  geom_xsidecol() +
  geom_ysidecol()
```

geom_xsideboxplot *Side boxplots*

Description

The *xside* and *yside* variants of `geom_boxplot` is `geom_xsideboxplot` and `geom_ysideboxplot`.

Usage

```
geom_xsideboxplot(
  mapping = NULL,
  data = NULL,
  stat = "boxplot",
  position = "dodge2",
  ...,
  outlier.colour = NULL,
  outlier.color = NULL,
  outlier.fill = NULL,
  outlier.shape = 19,
  outlier.size = 1.5,
  outlier.stroke = 0.5,
  outlier.alpha = NULL,
  notch = FALSE,
  notchwidth = 0.5,
  varwidth = FALSE,
  na.rm = FALSE,
  orientation = "x",
  show.legend = NA,
  inherit.aes = TRUE
)

geom_ysideboxplot(
```

```

mapping = NULL,
data = NULL,
stat = "boxplot",
position = "dodge2",
...,
outlier.colour = NULL,
outlier.color = NULL,
outlier.fill = NULL,
outlier.shape = 19,
outlier.size = 1.5,
outlier.stroke = 0.5,
outlier.alpha = NULL,
notch = FALSE,
notchwidth = 0.5,
varwidth = FALSE,
na.rm = FALSE,
orientation = "y",
show.legend = NA,
inherit.aes = TRUE
)

```

Arguments

mapping	Set of aesthetic mappings created by <code>aes()</code> or <code>aes_()</code> . If specified and <code>inherit.aes = TRUE</code> (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.
data	The data to be displayed in this layer. There are three options: If <code>NULL</code> , the default, the data is inherited from the plot data as specified in the call to <code>ggplot()</code> . A <code>data.frame</code> , or other object, will override the plot data. All objects will be fortified to produce a data frame. See <code>fortify()</code> for which variables will be created. A function will be called with a single argument, the plot data. The return value must be a <code>data.frame</code> , and will be used as the layer data. A function can be created from a formula (e.g. <code>~ head(.x, 10)</code>).
stat	Use to override the default connection between <code>geom_boxplot()</code> and <code>stat_boxplot()</code> .
position	Position adjustment, either as a string, or the result of a call to a position adjustment function.
...	Other arguments passed on to <code>layer()</code> . These are often aesthetics, used to set an aesthetic to a fixed value, like <code>colour = "red"</code> or <code>size = 3</code> . They may also be parameters to the paired <code>geom/stat</code> .
outlier.colour	Default aesthetics for outliers. Set to <code>NULL</code> to inherit from the aesthetics used for the box. In the unlikely event you specify both US and UK spellings of colour, the US spelling will take precedence. Sometimes it can be useful to hide the outliers, for example when overlaying the raw data points on top of the boxplot. Hiding the outliers can be achieved

	<p>by setting <code>outlier.shape = NA</code>. Importantly, this does not remove the outliers, it only hides them, so the range calculated for the y-axis will be the same with outliers shown and outliers hidden.</p>
<code>outlier.color</code>	<p>Default aesthetics for outliers. Set to <code>NULL</code> to inherit from the aesthetics used for the box.</p> <p>In the unlikely event you specify both US and UK spellings of colour, the US spelling will take precedence.</p> <p>Sometimes it can be useful to hide the outliers, for example when overlaying the raw data points on top of the boxplot. Hiding the outliers can be achieved by setting <code>outlier.shape = NA</code>. Importantly, this does not remove the outliers, it only hides them, so the range calculated for the y-axis will be the same with outliers shown and outliers hidden.</p>
<code>outlier.fill</code>	<p>Default aesthetics for outliers. Set to <code>NULL</code> to inherit from the aesthetics used for the box.</p> <p>In the unlikely event you specify both US and UK spellings of colour, the US spelling will take precedence.</p> <p>Sometimes it can be useful to hide the outliers, for example when overlaying the raw data points on top of the boxplot. Hiding the outliers can be achieved by setting <code>outlier.shape = NA</code>. Importantly, this does not remove the outliers, it only hides them, so the range calculated for the y-axis will be the same with outliers shown and outliers hidden.</p>
<code>outlier.shape</code>	<p>Default aesthetics for outliers. Set to <code>NULL</code> to inherit from the aesthetics used for the box.</p> <p>In the unlikely event you specify both US and UK spellings of colour, the US spelling will take precedence.</p> <p>Sometimes it can be useful to hide the outliers, for example when overlaying the raw data points on top of the boxplot. Hiding the outliers can be achieved by setting <code>outlier.shape = NA</code>. Importantly, this does not remove the outliers, it only hides them, so the range calculated for the y-axis will be the same with outliers shown and outliers hidden.</p>
<code>outlier.size</code>	<p>Default aesthetics for outliers. Set to <code>NULL</code> to inherit from the aesthetics used for the box.</p> <p>In the unlikely event you specify both US and UK spellings of colour, the US spelling will take precedence.</p> <p>Sometimes it can be useful to hide the outliers, for example when overlaying the raw data points on top of the boxplot. Hiding the outliers can be achieved by setting <code>outlier.shape = NA</code>. Importantly, this does not remove the outliers, it only hides them, so the range calculated for the y-axis will be the same with outliers shown and outliers hidden.</p>
<code>outlier.stroke</code>	<p>Default aesthetics for outliers. Set to <code>NULL</code> to inherit from the aesthetics used for the box.</p> <p>In the unlikely event you specify both US and UK spellings of colour, the US spelling will take precedence.</p> <p>Sometimes it can be useful to hide the outliers, for example when overlaying the raw data points on top of the boxplot. Hiding the outliers can be achieved by setting <code>outlier.shape = NA</code>. Importantly, this does not remove the outliers,</p>

	it only hides them, so the range calculated for the y-axis will be the same with outliers shown and outliers hidden.
outlier.alpha	<p>Default aesthetics for outliers. Set to NULL to inherit from the aesthetics used for the box.</p> <p>In the unlikely event you specify both US and UK spellings of colour, the US spelling will take precedence.</p> <p>Sometimes it can be useful to hide the outliers, for example when overlaying the raw data points on top of the boxplot. Hiding the outliers can be achieved by setting <code>outlier.shape = NA</code>. Importantly, this does not remove the outliers, it only hides them, so the range calculated for the y-axis will be the same with outliers shown and outliers hidden.</p>
notch	If FALSE (default) make a standard box plot. If TRUE, make a notched box plot. Notches are used to compare groups; if the notches of two boxes do not overlap, this suggests that the medians are significantly different.
notchwidth	For a notched box plot, width of the notch relative to the body (defaults to <code>notchwidth = 0.5</code>).
varwidth	If FALSE (default) make a standard box plot. If TRUE, boxes are drawn with widths proportional to the square-roots of the number of observations in the groups (possibly weighted, using the <code>weight</code> aesthetic).
na.rm	If FALSE, the default, missing values are removed with a warning. If TRUE, missing values are silently removed.
orientation	The orientation of the layer. The default (NA) automatically determines the orientation from the aesthetic mapping. In the rare event that this fails it can be given explicitly by setting <code>orientation</code> to either "x" or "y". See the <i>Orientation</i> section for more detail.
show.legend	logical. Should this layer be included in the legends? NA, the default, includes if any aesthetics are mapped. FALSE never includes, and TRUE always includes. It can also be a named logical vector to finely select the aesthetics to display.
inherit.aes	If FALSE, overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. <code>borders()</code> .

Value

XLayer or YLayer object to be added to a ggplot object

See Also

[geom_*sideviolin](#)

Examples

```
df <- expand.grid(UpperCase = LETTERS, LowerCase = letters)
df$Combo_Index <- as.integer(df$UpperCase)*as.integer(df$LowerCase)

p1 <- ggplot(df, aes(UpperCase, LowerCase)) +
```

```

geom_tile(aes(fill = Combo_Index))

#sideboxplots
#Note - Mixing discrete and continuous axis scales
#using xsideboxplots when the y aesthetic was previously
#mapped with a continuous variable will prevent
#any labels from being plotted. This is a feature that
#will hopefully be added to ggside in the future.

p1 + geom_xsideboxplot(aes(y = Combo_Index)) +
  geom_ysideboxplot(aes(x = Combo_Index))

#sideboxplots with swapped orientation
#Note - Discrete before Continuous
#If you are to mix Discrete and Continuous variables on
#one axis, ggplot2 prefers the discrete variable to be mapped
#BEFORE the continuous.
ggplot(iris, aes(Sepal.Width, Sepal.Length, color = Species)) +
  geom_xsideboxplot(aes(y = Species), orientation = "y") +
  geom_point()

#Alternatively, you can recast discrete as a factor and then
#a numeric
ggplot(iris, aes(Sepal.Width, Sepal.Length, color = Species))+
  geom_point() +
  geom_xsideboxplot(aes(y = as.numeric(Species)), orientation = "y") +
  geom_ysideboxplot(aes(x = as.numeric(Species)), orientation = "x")

```

geom_xsidedensity *Side density distributions*

Description

The `xside` and `yside` variants of `geom_density` is `geom_xsidedensity` and `geom_ysidedensity`.

Usage

```

geom_xsidedensity(
  mapping = NULL,
  data = NULL,
  stat = "density",
  position = "identity",
  ...,
  na.rm = FALSE,
  orientation = "x",
  show.legend = NA,
  inherit.aes = TRUE,
  outline.type = "upper"

```

```

)

geom_ysidedensity(
  mapping = NULL,
  data = NULL,
  stat = "density",
  position = "identity",
  ...,
  na.rm = FALSE,
  orientation = "y",
  show.legend = NA,
  inherit.aes = TRUE,
  outline.type = "upper"
)

```

Arguments

mapping	Set of aesthetic mappings created by <code>aes()</code> or <code>aes_()</code> . If specified and <code>inherit.aes = TRUE</code> (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.
data	The data to be displayed in this layer. There are three options: If <code>NULL</code> , the default, the data is inherited from the plot data as specified in the call to <code>ggplot()</code> . A <code>data.frame</code> , or other object, will override the plot data. All objects will be fortified to produce a data frame. See <code>fortify()</code> for which variables will be created. A function will be called with a single argument, the plot data. The return value must be a <code>data.frame</code> , and will be used as the layer data. A function can be created from a formula (e.g. <code>~ head(.x, 10)</code>).
stat	Use to override the default connection between <code>geom_density()</code> and <code>stat_density()</code> .
position	Position adjustment, either as a string, or the result of a call to a position adjustment function.
...	Other arguments passed on to <code>layer()</code> . These are often aesthetics, used to set an aesthetic to a fixed value, like <code>colour = "red"</code> or <code>size = 3</code> . They may also be parameters to the paired <code>geom/stat</code> .
na.rm	If <code>FALSE</code> , the default, missing values are removed with a warning. If <code>TRUE</code> , missing values are silently removed.
orientation	The orientation of the layer. The default (<code>NA</code>) automatically determines the orientation from the aesthetic mapping. In the rare event that this fails it can be given explicitly by setting <code>orientation</code> to either <code>"x"</code> or <code>"y"</code> . See the <i>Orientation</i> section for more detail.
show.legend	logical. Should this layer be included in the legends? <code>NA</code> , the default, includes if any aesthetics are mapped. <code>FALSE</code> never includes, and <code>TRUE</code> always includes. It can also be a named logical vector to finely select the aesthetics to display.
inherit.aes	If <code>FALSE</code> , overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. <code>borders()</code> .

`outline.type` Type of the outline of the area; "both" draws both the upper and lower lines, "upper"/"lower" draws the respective lines only. "full" draws a closed polygon around the area.

Value

XLayer or YLayer object to be added to a ggplot object

Examples

```
ggplot(mpg, aes(displ, hwy, colour = class)) +
  geom_point(size = 2) +
  geom_xsidedensity() +
  geom_ysidedensity() +
  theme(axis.text.x = element_text(angle = 90, vjust = .5))

ggplot(mpg, aes(displ, hwy, colour = class)) +
  geom_point(size = 2) +
  geom_xsidedensity(aes(y = after_stat(count)), position = "stack") +
  geom_ysidedensity(aes(x = after_stat(scaled))) +
  theme(axis.text.x = element_text(angle = 90, vjust = .5))
```

geom_xsidefreqpoly *Side Frequency Polygons*

Description

The `xside` and `yside` variants of `geom_freqpoly` is `geom_xsidefreqpoly` and `geom_ysidefreqpoly`.

Usage

```
geom_xsidefreqpoly(
  mapping = NULL,
  data = NULL,
  stat = "bin",
  position = "identity",
  ...,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

```
geom_ysidefreqpoly(
  mapping = NULL,
  data = NULL,
  stat = "bin",
```

```

  position = "identity",
  ...,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)

```

Arguments

mapping	Set of aesthetic mappings created by <code>aes()</code> or <code>aes_()</code> . If specified and <code>inherit.aes = TRUE</code> (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.
data	The data to be displayed in this layer. There are three options: If <code>NULL</code> , the default, the data is inherited from the plot data as specified in the call to <code>ggplot()</code> . A <code>data.frame</code> , or other object, will override the plot data. All objects will be fortified to produce a data frame. See <code>fortify()</code> for which variables will be created. A function will be called with a single argument, the plot data. The return value must be a <code>data.frame</code> , and will be used as the layer data. A function can be created from a formula (e.g. <code>~ head(.x, 10)</code>).
stat	Use to override the default connection between <code>geom_histogram()/geom_freqpoly()</code> and <code>stat_bin()</code> .
position	Position adjustment, either as a string, or the result of a call to a position adjustment function.
...	Other arguments passed on to <code>layer()</code> . These are often aesthetics, used to set an aesthetic to a fixed value, like <code>colour = "red"</code> or <code>size = 3</code> . They may also be parameters to the paired geom/stat.
na.rm	If <code>FALSE</code> , the default, missing values are removed with a warning. If <code>TRUE</code> , missing values are silently removed.
show.legend	logical. Should this layer be included in the legends? <code>NA</code> , the default, includes if any aesthetics are mapped. <code>FALSE</code> never includes, and <code>TRUE</code> always includes. It can also be a named logical vector to finely select the aesthetics to display.
inherit.aes	If <code>FALSE</code> , overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. <code>borders()</code> .

Value

XLayer or YLayer object to be added to a ggplot object

Examples

```

ggplot(diamonds, aes(price, carat, colour = cut)) +
  geom_point() +
  geom_xsidefreqpoly(aes(y=after_stat(count)),binwidth = 500) +
  geom_yfreqpoly(aes(x=after_stat(count)),binwidth = .2)

```

geom_xsidehistogram *Side Histograms*

Description

The *xside* and *yside* variants of `geom_histogram` is `geom_xsidehistogram` and `geom_ysidehistogram`. These variants both inherit from `geom_histogram` and only differ on where they plot data relative to main panels.

Usage

```
geom_xsidehistogram(  
  mapping = NULL,  
  data = NULL,  
  stat = "bin",  
  position = "stack",  
  ...,  
  binwidth = NULL,  
  bins = NULL,  
  na.rm = FALSE,  
  orientation = "x",  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_ysidehistogram(  
  mapping = NULL,  
  data = NULL,  
  stat = "bin",  
  position = "stack",  
  ...,  
  binwidth = NULL,  
  bins = NULL,  
  na.rm = FALSE,  
  orientation = "y",  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

Arguments

mapping	Set of aesthetic mappings created by <code>aes()</code> or <code>aes_()</code> . If specified and <code>inherit.aes = TRUE</code> (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.
data	The data to be displayed in this layer. There are three options: If <code>NULL</code> , the default, the data is inherited from the plot data as specified in the call to <code>ggplot()</code> .

A data.frame, or other object, will override the plot data. All objects will be fortified to produce a data frame. See `fortify()` for which variables will be created.

A function will be called with a single argument, the plot data. The return value must be a data.frame, and will be used as the layer data. A function can be created from a formula (e.g. `~ head(.x, 10)`).

stat	Use to override the default connection between <code>geom_histogram()/geom_freqpoly()</code> and <code>stat_bin()</code> .
position	Position adjustment, either as a string, or the result of a call to a position adjustment function.
...	Other arguments passed on to <code>layer()</code> . These are often aesthetics, used to set an aesthetic to a fixed value, like <code>colour = "red"</code> or <code>size = 3</code> . They may also be parameters to the paired geom/stat.
binwidth	The width of the bins. Can be specified as a numeric value or as a function that calculates width from unscaled x. Here, "unscaled x" refers to the original x values in the data, before application of any scale transformation. When specifying a function along with a grouping structure, the function will be called once per group. The default is to use the number of bins in <code>bins</code> , covering the range of the data. You should always override this value, exploring multiple widths to find the best to illustrate the stories in your data. The bin width of a date variable is the number of days in each time; the bin width of a time variable is the number of seconds.
bins	Number of bins. Overridden by <code>binwidth</code> . Defaults to 30.
na.rm	If FALSE, the default, missing values are removed with a warning. If TRUE, missing values are silently removed.
orientation	The orientation of the layer. The default (NA) automatically determines the orientation from the aesthetic mapping. In the rare event that this fails it can be given explicitly by setting <code>orientation</code> to either "x" or "y". See the <i>Orientation</i> section for more detail.
show.legend	logical. Should this layer be included in the legends? NA, the default, includes if any aesthetics are mapped. FALSE never includes, and TRUE always includes. It can also be a named logical vector to finely select the aesthetics to display.
inherit.aes	If FALSE, overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. <code>borders()</code> .

Value

XLayer or YLayer object to be added to a ggplot object

Aesthetics

`geom_xsidehistogram` uses the same aesthetics as `geom_xsidebar()`

Examples

```
p <-ggplot(iris, aes(Sepal.Width, Sepal.Length, color = Species, fill = Species)) +
  geom_point()

#sidehistogram
p +
  geom_xsidehistogram(binwidth = 0.1) +
  geom_ysidehistogram(binwidth = 0.1)
p +
  geom_xsidehistogram(aes(y = after_stat(density)), binwidth = 0.1) +
  geom_ysidehistogram(aes(x = after_stat(density)), binwidth = 0.1)
```

geom_xsiline

*Side line plot***Description**

The *xside* and *yside* of [geom_line](#). The *xside* and *yside* variants of [geom_path](#)

Usage

```
geom_xsiline(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  na.rm = FALSE,
  orientation = NA,
  show.legend = NA,
  inherit.aes = TRUE,
  ...
)
```

```
geom_ysiline(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  na.rm = FALSE,
  orientation = NA,
  show.legend = NA,
  inherit.aes = TRUE,
  ...
)
```

```
geom_xsidepath(
```



```

mapping = NULL,
data = NULL,
stat = "identity",
position = "identity",
...,
lineend = "butt",
linejoin = "round",
linemitre = 10,
arrow = NULL,
na.rm = FALSE,
show.legend = NA,
inherit.aes = TRUE
)

geom_ysidepath(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  lineend = "butt",
  linejoin = "round",
  linemitre = 10,
  arrow = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)

```

Arguments

mapping	Set of aesthetic mappings created by <code>aes()</code> or <code>aes_()</code> . If specified and <code>inherit.aes = TRUE</code> (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.
data	<p>The data to be displayed in this layer. There are three options:</p> <p>If <code>NULL</code>, the default, the data is inherited from the plot data as specified in the call to <code>ggplot()</code>.</p> <p>A <code>data.frame</code>, or other object, will override the plot data. All objects will be fortified to produce a data frame. See <code>fortify()</code> for which variables will be created.</p> <p>A function will be called with a single argument, the plot data. The return value must be a <code>data.frame</code>, and will be used as the layer data. A function can be created from a formula (e.g. <code>~ head(.x, 10)</code>).</p>
stat	The statistical transformation to use on the data for this layer, as a string.
position	Position adjustment, either as a string, or the result of a call to a position adjustment function.
na.rm	If <code>FALSE</code> , the default, missing values are removed with a warning. If <code>TRUE</code> , missing values are silently removed.

orientation	The orientation of the layer. The default (NA) automatically determines the orientation from the aesthetic mapping. In the rare event that this fails it can be given explicitly by setting orientation to either "x" or "y". See the <i>Orientation</i> section for more detail.
show.legend	logical. Should this layer be included in the legends? NA, the default, includes if any aesthetics are mapped. FALSE never includes, and TRUE always includes. It can also be a named logical vector to finely select the aesthetics to display.
inherit.aes	If FALSE, overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. <code>borders()</code> .
...	Other arguments passed on to <code>layer()</code> . These are often aesthetics, used to set an aesthetic to a fixed value, like <code>colour = "red"</code> or <code>size = 3</code> . They may also be parameters to the paired geom/stat.
lineend	Line end style (round, butt, square).
linejoin	Line join style (round, mitre, bevel).
linemitre	Line mitre limit (number greater than 1).
arrow	Arrow specification, as created by <code>grid::arrow()</code> .

Value

XLayer or YLayer object to be added to a ggplot object

Examples

```
#sideline
ggplot(economics, aes(date, pop)) +
  geom_xsideline(aes(y = unemploy)) +
  geom_col()
```

geom_xsidepoint	<i>Side Points</i>
-----------------	--------------------

Description

The ggside variants of `geom_point` is `geom_xsidepoint()` and `geom_ysidepoint()`. Both variants inherit from `geom_point`, thus the only difference is where the data is plotted. The `xside` variant will plot data along the x-axis, while the `yside` variant will plot data along the y-axis.

Usage

```
geom_xsidepoint(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,

```

```

    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

geom_y-sidepoint(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)

```

Arguments

mapping	Set of aesthetic mappings created by <code>aes()</code> or <code>aes_()</code> . If specified and <code>inherit.aes = TRUE</code> (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.
data	The data to be displayed in this layer. There are three options: If <code>NULL</code> , the default, the data is inherited from the plot data as specified in the call to <code>ggplot()</code> . A <code>data.frame</code> , or other object, will override the plot data. All objects will be fortified to produce a data frame. See <code>fortify()</code> for which variables will be created. A function will be called with a single argument, the plot data. The return value must be a <code>data.frame</code> , and will be used as the layer data. A function can be created from a formula (e.g. <code>~ head(.x, 10)</code>).
stat	The statistical transformation to use on the data for this layer, as a string.
position	Position adjustment, either as a string, or the result of a call to a position adjustment function.
...	Other arguments passed on to <code>layer()</code> . These are often aesthetics, used to set an aesthetic to a fixed value, like <code>colour = "red"</code> or <code>size = 3</code> . They may also be parameters to the paired geom/stat.
na.rm	If <code>FALSE</code> , the default, missing values are removed with a warning. If <code>TRUE</code> , missing values are silently removed.
show.legend	logical. Should this layer be included in the legends? <code>NA</code> , the default, includes if any aesthetics are mapped. <code>FALSE</code> never includes, and <code>TRUE</code> always includes. It can also be a named logical vector to finely select the aesthetics to display.
inherit.aes	If <code>FALSE</code> , overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. <code>borders()</code> .

Value

XLayer or YLayer object to be added to a ggplot object

Examples

```
ggplot(diamonds, aes(depth, table, alpha = .2)) +  
  geom_point() +  
  geom_ysidepoint(aes(x = price)) +  
  geom_xsidepoint(aes(y = price)) +  
  theme(  
    ggside.panel.scale = .3  
  )
```

geom_xsidesegment *Side line Segments*

Description

The [xside](#) and [yside](#) of [geom_segment](#).

Usage

```
geom_xsidesegment(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  arrow = NULL,  
  arrow.fill = NULL,  
  lineend = "butt",  
  linejoin = "round",  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_ysidesegment(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  arrow = NULL,  
  arrow.fill = NULL,  
  lineend = "butt",  
  linejoin = "round",  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

Arguments

mapping	Set of aesthetic mappings created by <code>aes()</code> or <code>aes_()</code> . If specified and <code>inherit.aes = TRUE</code> (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.
data	The data to be displayed in this layer. There are three options: If <code>NULL</code> , the default, the data is inherited from the plot data as specified in the call to <code>ggplot()</code> . A <code>data.frame</code> , or other object, will override the plot data. All objects will be fortified to produce a data frame. See <code>fortify()</code> for which variables will be created. A function will be called with a single argument, the plot data. The return value must be a <code>data.frame</code> , and will be used as the layer data. A function can be created from a formula (e.g. <code>~ head(.x, 10)</code>).
stat	The statistical transformation to use on the data for this layer, as a string.
position	Position adjustment, either as a string, or the result of a call to a position adjustment function.
...	Other arguments passed on to <code>layer()</code> . These are often aesthetics, used to set an aesthetic to a fixed value, like <code>colour = "red"</code> or <code>size = 3</code> . They may also be parameters to the paired geom/stat.
arrow	specification for arrow heads, as created by <code>arrow()</code> .
arrow.fill	fill colour to use for the arrow head (if closed). <code>NULL</code> means use colour aesthetic.
lineend	Line end style (round, butt, square).
linejoin	Line join style (round, mitre, bevel).
na.rm	If <code>FALSE</code> , the default, missing values are removed with a warning. If <code>TRUE</code> , missing values are silently removed.
show.legend	logical. Should this layer be included in the legends? <code>NA</code> , the default, includes if any aesthetics are mapped. <code>FALSE</code> never includes, and <code>TRUE</code> always includes. It can also be a named logical vector to finely select the aesthetics to display.
inherit.aes	If <code>FALSE</code> , overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. <code>borders()</code> .

Value

XLayer or YLayer object to be added to a ggplot object

Examples

```
library(dplyr)
library(tidyr)
library(ggdendro)
#dendrogram with geom_*sidesegment
df0 <- mutate(diamonds,
  colclar = interaction(color, clarity,
```

```

                                sep = "_", drop = TRUE))
df1 <- df0 %>%
  group_by(color, clarity, colclar, cut) %>%
  summarise(m_price = mean(price))
df <- df1 %>%
  pivot_wider(id_cols = colclar,
              names_from = cut,
              values_from = m_price,
              values_fill = 0L)

mat <- as.matrix(df[,2:6])
rownames(mat) <- df[["colclar"]]
dst <- dist(mat)
hc_x <- hclust(dst)
lvls <- rownames(mat)[hc_x$order]
df1[["colclar"]] <- factor(df1[["colclar"]], levels = lvls)
dendrox <- dendro_data(hc_x)

p <- ggplot(df1, aes(x = colclar, cut)) +
  geom_tile(aes(fill = m_price)) +
  viridis::scale_fill_viridis(option = "magma") +
  theme(axis.text.x = element_text(angle = 90, vjust = .5))
p +
  geom_xsideselement(data = dendrox$segments, aes(x = x, y = y, xend = xend, yend = yend))

```

geom_xsidetext

Side text

Description

The `xside` and `yside` variants of `geom_text`.

Usage

```

geom_xsidetext(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  parse = FALSE,
  nudge_x = 0,
  nudge_y = 0,
  check_overlap = FALSE,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)

```

```
geom_ysidetext(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  parse = FALSE,
  nudge_x = 0,
  nudge_y = 0,
  check_overlap = FALSE,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

mapping	Set of aesthetic mappings created by <code>aes()</code> or <code>aes_()</code> . If specified and <code>inherit.aes = TRUE</code> (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.
data	The data to be displayed in this layer. There are three options: If <code>NULL</code> , the default, the data is inherited from the plot data as specified in the call to <code>ggplot()</code> . A <code>data.frame</code> , or other object, will override the plot data. All objects will be fortified to produce a data frame. See <code>fortify()</code> for which variables will be created. A function will be called with a single argument, the plot data. The return value must be a <code>data.frame</code> , and will be used as the layer data. A function can be created from a formula (e.g. <code>~ head(.x, 10)</code>).
stat	The statistical transformation to use on the data for this layer, as a string.
position	Position adjustment, either as a string, or the result of a call to a position adjustment function. Cannot be jointly specified with <code>nudge_x</code> or <code>nudge_y</code> .
...	Other arguments passed on to <code>layer()</code> . These are often aesthetics, used to set an aesthetic to a fixed value, like <code>colour = "red"</code> or <code>size = 3</code> . They may also be parameters to the paired <code>geom/stat</code> .
parse	If <code>TRUE</code> , the labels will be parsed into expressions and displayed as described in <code>?plotmath</code> .
nudge_x	Horizontal and vertical adjustment to nudge labels by. Useful for offsetting text from points, particularly on discrete scales. Cannot be jointly specified with <code>position</code> .
nudge_y	Horizontal and vertical adjustment to nudge labels by. Useful for offsetting text from points, particularly on discrete scales. Cannot be jointly specified with <code>position</code> .
check_overlap	If <code>TRUE</code> , text that overlaps previous text in the same layer will not be plotted. <code>check_overlap</code> happens at draw time and in the order of the data. Therefore data should be arranged by the label column before calling <code>geom_text()</code> . Note that this argument is not supported by <code>geom_label()</code> .

na.rm	If FALSE, the default, missing values are removed with a warning. If TRUE, missing values are silently removed.
show.legend	logical. Should this layer be included in the legends? NA, the default, includes if any aesthetics are mapped. FALSE never includes, and TRUE always includes. It can also be a named logical vector to finely select the aesthetics to display.
inherit.aes	If FALSE, overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. <code>borders()</code> .

Value

XLayer or YLayer object to be added to a ggplot object

geom_xsidetile	<i>Side tile plot</i>
----------------	-----------------------

Description

The `xside` and `yside` variants of `geom_tile`

Usage

```
geom_xsidetile(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  linejoin = "mitre",
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

```
geom_ysidetile(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  linejoin = "mitre",
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```


Arguments

mapping	Set of aesthetic mappings created by <code>aes()</code> or <code>aes_()</code> . If specified and <code>inherit.aes = TRUE</code> (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.
data	The data to be displayed in this layer. There are three options: If <code>NULL</code> , the default, the data is inherited from the plot data as specified in the call to <code>ggplot()</code> . A <code>data.frame</code> , or other object, will override the plot data. All objects will be fortified to produce a data frame. See <code>fortify()</code> for which variables will be created. A function will be called with a single argument, the plot data. The return value must be a <code>data.frame</code> , and will be used as the layer data. A function can be created from a formula (e.g. <code>~ head(.x, 10)</code>).
stat	The statistical transformation to use on the data for this layer, as a string.
position	Position adjustment, either as a string, or the result of a call to a position adjustment function.
...	Other arguments passed on to <code>layer()</code> . These are often aesthetics, used to set an aesthetic to a fixed value, like <code>colour = "red"</code> or <code>size = 3</code> . They may also be parameters to the paired geom/stat.
linejoin	Line join style (round, mitre, bevel).
na.rm	If <code>FALSE</code> , the default, missing values are removed with a warning. If <code>TRUE</code> , missing values are silently removed.
show.legend	logical. Should this layer be included in the legends? <code>NA</code> , the default, includes if any aesthetics are mapped. <code>FALSE</code> never includes, and <code>TRUE</code> always includes. It can also be a named logical vector to finely select the aesthetics to display.
inherit.aes	If <code>FALSE</code> , overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. <code>borders()</code> .

Value

XLayer or YLayer object to be added to a ggplot object

Examples

```
library(dplyr)
library(tidyr)
df <- mutate(diamonds,
             colclar = interaction(color, clarity, sep = "_", drop = TRUE)) %>%
  group_by(color, clarity, colclar, cut) %>%
  summarise(m_price = mean(price))

xside_data <- df %>%
  ungroup() %>%
  select(colclar, clarity, color) %>%
  mutate_all(~factor(as.character(.x), levels = levels(.x))) %>%
```

```

pivot_longer(cols = c(clarity, color)) %>% distinct()

p <- ggplot(df, aes(x = colclar, cut)) +
  geom_tile(aes(fill = m_price)) +
  viridis::scale_fill_viridis(option = "magma") +
  theme(axis.text.x = element_blank())

p + geom_xsidetile(data = xside_data, aes(y = name, xfill = value)) +
  guides(xfill = guide_legend(nrow = 8))

```

geom_xsideviolin *Side Violin plots*

Description

The [xside](#) and [yside](#) variants of [geom_violin](#)

Usage

```

geom_xsideviolin(
  mapping = NULL,
  data = NULL,
  stat = "ydensity",
  position = "dodge",
  ...,
  draw_quantiles = NULL,
  trim = TRUE,
  scale = "area",
  na.rm = FALSE,
  orientation = NA,
  show.legend = NA,
  inherit.aes = TRUE
)

```

```

geom_ysideviolin(
  mapping = NULL,
  data = NULL,
  stat = "ydensity",
  position = "dodge",
  ...,
  draw_quantiles = NULL,
  trim = TRUE,
  scale = "area",
  na.rm = FALSE,
  orientation = "y",
  show.legend = NA,
  inherit.aes = TRUE
)

```

Arguments

mapping	Set of aesthetic mappings created by <code>aes()</code> or <code>aes_()</code> . If specified and <code>inherit.aes = TRUE</code> (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.
data	The data to be displayed in this layer. There are three options: If <code>NULL</code> , the default, the data is inherited from the plot data as specified in the call to <code>ggplot()</code> . A <code>data.frame</code> , or other object, will override the plot data. All objects will be fortified to produce a data frame. See <code>fortify()</code> for which variables will be created. A function will be called with a single argument, the plot data. The return value must be a <code>data.frame</code> , and will be used as the layer data. A function can be created from a formula (e.g. <code>~ head(.x, 10)</code>).
stat	Use to override the default connection between <code>geom_violin()</code> and <code>stat_ydensity()</code> .
position	Position adjustment, either as a string, or the result of a call to a position adjustment function.
...	Other arguments passed on to <code>layer()</code> . These are often aesthetics, used to set an aesthetic to a fixed value, like <code>colour = "red"</code> or <code>size = 3</code> . They may also be parameters to the paired geom/stat.
draw_quantiles	If not (<code>NULL</code>) (default), draw horizontal lines at the given quantiles of the density estimate.
trim	If <code>TRUE</code> (default), trim the tails of the violins to the range of the data. If <code>FALSE</code> , don't trim the tails.
scale	if "area" (default), all violins have the same area (before trimming the tails). If "count", areas are scaled proportionally to the number of observations. If "width", all violins have the same maximum width.
na.rm	If <code>FALSE</code> , the default, missing values are removed with a warning. If <code>TRUE</code> , missing values are silently removed.
orientation	The orientation of the layer. The default (<code>NA</code>) automatically determines the orientation from the aesthetic mapping. In the rare event that this fails it can be given explicitly by setting <code>orientation</code> to either "x" or "y". See the <i>Orientation</i> section for more detail.
show.legend	logical. Should this layer be included in the legends? <code>NA</code> , the default, includes if any aesthetics are mapped. <code>FALSE</code> never includes, and <code>TRUE</code> always includes. It can also be a named logical vector to finely select the aesthetics to display.
inherit.aes	If <code>FALSE</code> , overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. <code>borders()</code> .

Value

XLayer or YLayer object to be added to a ggplot object

See Also

[geom_*sideboxplot](#)

Examples

```
df <- expand.grid(UpperCase = LETTERS, LowerCase = letters)
df$Combo_Index <- as.integer(df$UpperCase)*as.integer(df$LowerCase)

p1 <- ggplot(df, aes(UpperCase, LowerCase)) +
  geom_tile(aes(fill = Combo_Index))

#sideviolins
#Note - Mixing discrete and continuous axis scales
#using xsideviolins when the y aesthetic was previously
#mapped with a continuous variable will prevent
#any labels from being plotted. This is a feature that
#will hopefully be added to ggside in the future.

p1 + geom_xsideviolin(aes(y = Combo_Index)) +
  geom_ysideviolin(aes(x = Combo_Index))

#sideviolins with swapped orientation
#Note - Discrete before Continuous
#If you are to mix Discrete and Continuous variables on
#one axis, ggplot2 prefers the discrete variable to be mapped
#BEFORE the continuous.
ggplot(iris, aes(Sepal.Width, Sepal.Length, color = Species)) +
  geom_xsideviolin(aes(y = Species), orientation = "y") +
  geom_point()

#Alternatively, you can recast the value as a factor and then
# a numeric

ggplot(iris, aes(Sepal.Width, Sepal.Length, color = Species))+
  geom_point() +
  geom_xsideviolin(aes(y = as.numeric(Species)), orientation = "y") +
  geom_ysideviolin(aes(x = as.numeric(Species)), orientation = "x")
```

ggside

ggside options

Description

Set characteristics of side panels

Usage

```
ggside(x.pos = "top", y.pos = "right", scales = "fixed", collapse = NULL)
```

Arguments

x.pos x side panel can either take "top" or "bottom"

y.pos	y side panel can either take "right" or "left"
scales	Determines side panel's unaligned axis scale. Inputs are similar to facet_* scales function. Default is set to "fixed", but "free_x", "free_y" and "free" are acceptable inputs. For example, xside panels are aligned to the x axis of the main panel. Setting "free" or "free_y" will cause all y scales of the x side Panels to be independent.
collapse	Determines if side panels should be collapsed into a single panel. Set "x" to collapse all x side panels, set "y" to collapse all y side panels, set "all" to collapse both x and y side panels.

Value

a object of class 'ggside_options' or to be added to a ggplot

See Also

For more information regarding the ggside api: see [xside](#) or [yside](#)

ggside-scales-continuous

Position scales for continuous data ggside scales

Description

The [xside](#) and [yside](#) variants of [scale_x_continuous/scale_y_continuous](#). [scale_xsidey_continuous](#) enables better control on how the y-axis is rendered on the xside panel and [scale_ysidex_continuous](#) enables better control on how the x-axis is rendered on the yside panel.

Arguments

name	The name of the scale. Used as the axis or legend title. If <code>waiver()</code> , the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.
breaks	One of: <ul style="list-style-type: none"> • NULL for no breaks • <code>waiver()</code> for the default breaks computed by the transformation object • A numeric vector of positions • A function that takes the limits as input and returns breaks as output (e.g., a function returned by <code>scales::extended_breaks()</code>). Also accepts rlang lambda function notation.
minor_breaks	One of: <ul style="list-style-type: none"> • NULL for no minor breaks • <code>waiver()</code> for the default breaks (one minor break between each major break) • A numeric vector of positions

	<ul style="list-style-type: none"> • A function that given the limits returns a vector of minor breaks. Also accepts rlang <code>lambda</code> function notation.
n.breaks	An integer guiding the number of major breaks. The algorithm may choose a slightly different number to ensure nice break labels. Will only have an effect if <code>breaks = waiver()</code> . Use NULL to use the default number of breaks given by the transformation.
labels	One of: <ul style="list-style-type: none"> • NULL for no labels • <code>waiver()</code> for the default labels computed by the transformation object • A character vector giving labels (must be same length as breaks) • A function that takes the breaks as input and returns labels as output. Also accepts rlang <code>lambda</code> function notation.
limits	One of: <ul style="list-style-type: none"> • NULL to use the default scale range • A numeric vector of length two providing limits of the scale. Use NA to refer to the existing minimum or maximum • A function that accepts the existing (automatic) limits and returns new limits. Also accepts rlang <code>lambda</code> function notation. Note that setting limits on positional scales will remove data outside of the limits. If the purpose is to zoom, use the limit argument in the coordinate system (see <code>coord_cartesian()</code>).
expand	For position scales, a vector of range expansion constants used to add some padding around the data to ensure that they are placed some distance away from the axes. Use the convenience function <code>expansion()</code> to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.
oob	One of: <ul style="list-style-type: none"> • Function that handles limits outside of the scale limits (out of bounds). Also accepts rlang <code>lambda</code> function notation. • The default (<code>scales::: censor()</code>) replaces out of bounds values with NA. • <code>scales::: squish()</code> for squishing out of bounds values into range. • <code>scales::: squish_infinite()</code> for squishing infinite values into range.
na.value	Missing values will be replaced with this value.
trans	For continuous scales, the name of a transformation object or the object itself. Built-in transformations include "asn", "atanh", "boxcox", "date", "exp", "hms", "identity", "log", "log10", "log1p", "log2", "logit", "modulus", "probability", "probit", "pseudo_log", "reciprocal", "reverse", "sqrt" and "time". A transformation object bundles together a transform, its inverse, and methods for generating breaks and labels. Transformation objects are defined in the scales package, and are called <name>_trans (e.g., <code>scales::: boxcox_trans()</code>). You can create your own transformation with <code>scales::: trans_new()</code> .
guide	A function used to create a guide or its name. See <code>guides()</code> for more information.
position	For position scales, The position of the axis. left or right for y axes, top or bottom for x axes.

Value

ggside_scale object inheriting from ggplot2::ScaleContinuousPosition

Examples

```
library(ggside)
library(ggplot2)
# adding continuous y-scale to the x-side panel, when main panel mapped to discrete data
ggplot(mpg, aes(hwy, class, colour = class)) +
  geom_boxplot() +
  geom_xsidedensity(position = "stack") +
  theme(ggside.panel.scale = .3) +
  scale_xsidey_continuous(minor_breaks = NULL, limits = c(NA,1))

#If you need to specify the main scale, but need to prevent this from
#affecting the side scale. Simply add the appropriate `scale_*side*_*()` function.
ggplot(mtcars, aes(wt, mpg)) +
  geom_point() +
  geom_xsidehistogram() +
  geom_ysidehistogram() +
  scale_x_continuous(
    breaks = seq(1, 6, 1),
    #would otherwise remove the histogram
    #as they have a lower value of 0.
    limits = (c(1, 6))
  ) +
  scale_ysidex_continuous() #ensures the x-axis of the y-side panel has its own scale.
```

ggside-scales-discrete

Position scales for discrete data ggside scales

Description

The `xside` and `yside` variants of `scale_x_discrete/scale_y_discrete`. `scale_xsidey_discrete` enables better control on how the y-axis is rendered on the xside panel and `scale_ysidex_discrete` enables better control on how the x-axis is rendered on the yside panel.

Arguments

expand	For position scales, a vector of range expansion constants used to add some padding around the data to ensure that they are placed some distance away from the axes. Use the convenience function <code>expansion()</code> to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.
guide	A function used to create a guide or its name. See <code>guides()</code> for more information.

position For position scales, The position of the axis. left or right for y axes, top or bottom for x axes.

Value

ggside_scale object inheriting from ggplot2::ScaleDiscretePosition

Examples

```
library(ggside)
library(ggplot2)
# adding discrete y-scale to the x-side panel, when main panel mapped to continuous data
ggplot(mpg, aes(displ, hwy, colour = class)) +
  geom_point() +
  geom_xsideboxplot(aes(y=class), orientation = "y") +
  theme(ggside.panel.scale = .3) +
  scale_xsidey_discrete(guide = guide_axis(angle = 45))

#If you need to specify the main scale, but need to prevent this from
#affecting the side scale. Simply add the appropriate `scale_*side*_*()` function.
ggplot(mpg, aes(class, displ)) +
  geom_boxplot() +
  geom_ysideboxplot(aes(x = "all"), orientation = "x") +
  scale_x_discrete(guide = guide_axis(angle = 90)) + #rotate the main panel text
  scale_ysidex_discrete() #leave side panel as default
```

ggside-theme

ggside custom themes

Description

the following are the theme elements defined in [ggside](#).

Elements

- `ggside.panel.scale` - sets the scaling of side panels relative to the plotting width of the main panels. Default is set to 0.1, i.e. 0.1/1
- `ggside.panel.scale.x` - same as `ggside.panel.scale` except only for the xside panel.
- `ggside.panel.scale.y` - same as `ggside.panel.scale` except only for the yside panel.
- `ggside.panel.spacing` - sets how much spacing should be used between the main panels and the side panels. default is `unit(2,"pt")`
- `ggside.panel.spacing.x` - same as `ggside.panel.spacing` except only for the space between the main panel and the yside panel.
- `ggside.panel.spacing.y` - same as `ggside.panel.spacing` except only for the space between the main panel and the xside panel.

is.ggside	<i>Check ggside objects</i>
-----------	-----------------------------

Description

Check ggside objects

Usage

```
is.ggside(x)
is.ggside_layer(x)
is.ggside_options(x)
is.ggside_scale(x)
```

Arguments

x Object to test

Value

A logical value

position_rescale	<i>Rescale x or y onto new range in margin</i>
------------------	--

Description

Take the range of the specified axis and rescale it to a new range about a midpoint. By default the range will be calculated from the associated main plot axis mapping. The range will either be the resolution or 5% of the axis range, depending if original data is discrete or continuous respectively. Each layer called with `position_rescale` will possess an instance value that indexes with axis rescale. By default, each `position_rescale` will dodge the previous call unless instance is specified to a previous layer.

Usage

```
position_rescale(
  rescale = "y",
  midpoint = NULL,
  range = NULL,
  location = NULL,
  instance = NULL
)
```

```

position_yrescale(
  rescale = "y",
  midpoint = NULL,
  range = NULL,
  location = NULL,
  instance = NULL
)

position_xrescale(
  rescale = "x",
  midpoint = NULL,
  range = NULL,
  location = NULL,
  instance = NULL
)

```

Arguments

rescale	character value of "x" or "y". specifies which mapping data will be rescaled
midpoint	default set to NULL. Center point about which the rescaled x/y values will reside.
range	default set to NULL and auto generates from main mapping range. Specifies the size of the rescaled range.
location	specifies where position_rescale should try to place midpoint. If midpoint is specified, location is ignored and placed at the specified location.
instance	integer that indexes rescaled axis calls. instance may be specified and if a previous layer with the same instance exists, then the same midpoint and range are used for rescaling. x and y are indexed independently.

Format

An object of class PositionRescale (inherits from Position, ggproto, gg) of length 10.

Value

a ggproto object inheriting from 'Position' and can be added to a ggplot

scale_xcolour

*Scales for the *colour aesthetics*

Description

These are the various scales that can be applied to the xsidebar or ysidebar colour aesthetics, such as xcolour and ycolour. They have the same usage as existing standard ggplot2 scales.

Value

returns a ggproto object to be added to a ggplot

Related Functions

- scale_xcolour_hue
- scale_ycolour_hue
- scale_xcolour_discrete
- scale_ycolour_discrete
- scale_xcolour_continuous
- scale_ycolour_continuous
- scale_xcolour_manual
- scale_ycolour_manual
- scale_xcolour_gradient
- scale_ycolour_gradient
- scale_xcolour_gradientn
- scale_ycolour_gradientn

scale_xfill

*Scales for the *fill aesthetics*

Description

These are the various scales that can be applied to the xsidebar or ysidebar fill aesthetics, such as xfill and yfill. They have the same usage as existing standard ggplot2 scales.

Value

returns a ggproto object to be added to a ggplot

Related Functions

- scale_xfill_hue
- scale_yfill_hue
- scale_xfill_discrete
- scale_yfill_discrete
- scale_xfill_continuous
- scale_yfill_continuous
- scale_xfill_manual
- scale_yfill_manual
- scale_xfill_gradient
- scale_yfill_gradient
- scale_xfill_gradientn
- scale_yfill_gradientn

scale_ycolour_hue	<i>scale_ycolour_hue</i>
-------------------	--------------------------

Description

scale_ycolour_hue
scale_ycolour_manual
scale_ycolour_gradient
scale_ycolour_discrete
scale_ycolour_discrete
scale_ycolour_continuous
scale_ycolour_continuous

scale_yfill_hue	<i>scale_yfill_hue</i>
-----------------	------------------------

Description

scale_yfill_hue
scale_yfill_manual
scale_yfill_gradient
scale_yfill_discrete
scale_yfill_continuous

stat_summarise	<i>Summarise by grouping variable</i>
----------------	---------------------------------------

Description

Applies a function to a specified grouping variable

Usage

```
stat_summarise(
  mapping = NULL,
  data = NULL,
  geom = "bar",
  position = "identity",
  ...,
  fun = NULL,
  args = list(),
  show.legend = NA,
  inherit.aes = TRUE
)
```

```
stat_summarize(
  mapping = NULL,
  data = NULL,
  geom = "bar",
  position = "identity",
  ...,
  fun = NULL,
  args = list(),
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

mapping	Set of aesthetic mappings created by aes() or aes_() . If specified and <code>inherit.aes = TRUE</code> (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.
data	The data to be displayed in this layer. There are three options: If <code>NULL</code> , the default, the data is inherited from the plot data as specified in the call to ggplot() . A <code>data.frame</code> , or other object, will override the plot data. All objects will be fortified to produce a data frame. See fortify() for which variables will be created. A function will be called with a single argument, the plot data. The return value must be a <code>data.frame</code> , and will be used as the layer data. A function can be created from a formula (e.g. <code>~ head(.x, 10)</code>).
geom	The geometric object to use display the data
position	Position adjustment, either as a string, or the result of a call to a position adjustment function.
...	additional arguments to pass to layer .
fun	Summarising function to use. If no function provided it will default to length .
args	List of additional arguments passed to the function.

<code>show.legend</code>	logical. Should this layer be included in the legends? NA, the default, includes if any aesthetics are mapped. FALSE never includes, and TRUE always includes. It can also be a named logical vector to finely select the aesthetics to display.
<code>inherit.aes</code>	If FALSE, overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn't inherit behaviour from the default plot specification, e.g. <code>borders()</code> .

Format

An object of class `StatSummarise` (inherits from `Stat`, `ggproto`, `gg`) of length 5.

An object of class `StatSummarize` (inherits from `Stat`, `ggproto`, `gg`) of length 5.

Value

A Layer object to be added to a `ggplot`

Aesthetics

Using `stat_summarise` requires that you use `domain` as an aesthetic mapping. This allows you to summarise other data instead of assuming that `x` is the function's domain.

Examples

```
library(tidyr)
i <- gather(iris, "key", "value", -Species)
ggplot(i, aes(Species, fill = key, domain = value)) +
  geom_bar(aes(y = after_stat(summarise)), stat = "summarise", fun = mean) +
  stat_summarise(aes(y = after_stat(summarise),
                    label = after_stat(summarise)),
                position = position_stack(vjust = .5), geom = "text", fun = mean)
```

use_xside_aes

Extending base ggproto classes for ggside

Description

These `ggproto` classes are slightly modified from their respective inherited `ggproto` class. The biggest difference is exposing `'x/yfill'`, `'x/ycolour'`, and `'x/ycolor'` as viable aesthetic mappings.

Usage

```
use_xside_aes(data)
```

```
use_yside_aes(data)
```

```
parse_side_aes(data, params)
```

Arguments

data	data passed internally
params	params available to ggproto object

Value

ggproto object that is usually passed to [layer](#)

xside	<i>The xside geometries</i>
-------	-----------------------------

Description

xside refers to the api of ggside. Any geom_ with xside will plot its respective geometry along the x-axis per facet panel. By default the xside panel will plot above the main panel. This xside panel will always share the same scale as it's main panel, but is expected to have a separate y-axis scaling.

Value

geom_xside* return a XLayer object to be added to a ggplot

New Aesthetics

All xside Geometries have xfill, xcolour/xcolor available for aesthetic mappings. These mappings behave exactly like the default counterparts except that they are considered separate scales. All xside geometries will use xfill over fill, but will default to fill if xfill is not provided. The same goes for xcolour in respects to colour. This comes in handy if you wish to map both fill to one geometry as continuous, you can still map xfill for a separate xside geometry without conflicts. See more information in `vignette("ggside")`.

Exported Geometries

The following are the xside variants of the [ggplot2](#) Geometries

- [geom_xsidebar](#)
- [geom_xsideboxplot](#)
- [geom_xsidecol](#)
- [geom_xsidedensity](#)
- [geom_xsidefreqpoly](#)
- [geom_xsidehistogram](#)
- [geom_xsideline](#)
- [geom_xsidepath](#)
- [geom_xsidepoint](#)
- [geom_xsidetext](#)
- [geom_xsidetile](#)
- [geom_xsideviolin](#)

See Also[yside](#)

[yside](#)*The yside geometries*

Description

`yside` refers to the api of `ggside`. Any `geom_*` with `yside` will plot its respective geometry along the y-axis per facet panel. The `yside` panel will plot to the right of the main panel by default. This `yside` panel will always share the same scale as it's main panel, but is expected to have a separate x-axis scaling.

Value

`geom_yside*` return a `YLayer` object to be added to a `ggplot`

New Aesthetics

All `yside` Geometries have `yfill`, `ycolour`/`ycolor` available for aesthetic mappings. These mappings behave exactly like the default counterparts except that they are considered separate scales. All `yside` geometries will use `yfill` over `fill`, but will default to `fill` if `yfill` is not provided. The same goes for `ycolour` in respects to `colour`. This comes in handy if you wish to map both `fill` to one geometry as continuous, you can still map `yfill` for a separate `yside` geometry without conflicts. See more information in `vignette("ggside")`.

#' @section Exported Geometries:

The following are the `yside` variants of the [ggplot2](#) Geometries

- [geom_ysidebar](#)
- [geom_ysideboxplot](#)
- [geom_ysidecol](#)
- [geom_ysidedensity](#)
- [geom_ysidefreqpoly](#)
- [geom_ysidehistogram](#)
- [geom_ysideline](#)
- [geom_ysidepath](#)
- [geom_ysidepoint](#)
- [geom_ysidetext](#)
- [geom_ysidetile](#)
- [geom_ysideviolin](#)

See Also[xside](#)

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